

Southeastern European Regional Programming Contest
Bucharest, Romania – Vinnytsya, Ukraine
October 22, 2016

Problem A
Three Squares

Input File: A.in
Output File: standard output
Time Limit: 1 seconds (C/C++)
Memory Limit: 256 megabytes

There are ***N*** distinct points located at integer coordinates in the plane. We want to place three identical axis-parallel squares on the plane, such that each of the ***N*** points is located inside (or on the borders of) at least one of the squares. What is the minimum possible side length of the squares?

Input
The first line contains the integer number ***N*** (**1 ≤ *N* ≤ 100000**). The next ***N*** lines contain two space-separated integers each, the **x** and **y** coordinates of one of the points (**0 ≤ *x*, *y* ≤ 10^9**).

Output
Print the minimum possible side length of the 3 squares, such that all the ***N*** points are covered by them.

Sample input	Sample output
5 0 0 10 0 0 1 2 2 9 3	2

Explanation
You can place the 3 squares with their bottom-left corners at the following coordinates: (0,0), (8,0), (7,1).